

CA DEPARTMENT OF WATER RESOURCES

PROPOSED REGULATIONS

TITLE 23. WATERS

DIVISION 2. DEPARTMENT OF WATER RESOURCES

CHAPTER 7. WATER LOSS AUDITS AND WATER LOSS CONTROL
REPORTING

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Title 23. Waters

Division 2. Department of Water Resources

Chapter 7. Water ~~Loss~~ Audits and Water Loss Control Reporting (New).

~~23 CCR § 700.0.~~

§ 700.0 Validated Water Loss Audits by Urban Water Suppliers.

(a) The Department is directed, under California Water Code (CWC) §10608.34, to adopt rules for:

- (1) the conduct of standardized water loss audits by urban retail water suppliers ~~of their potable water systems~~;
- (2) the process for validating a water loss audit;
- (3) the technical qualifications required of a person to engage in validating a water loss audit;
- (4) the additional requirements for a person selected by an urban retail water supplier to provide validation of its own Report; and
- (5) the method of submitting a Report to the Department.

(b) The Department is further directed, under California Water Code §10608.34, to update the rules described in subsection (a) as necessary, within six months after the release of a new edition of the ~~American Water Works Association's~~ ~~AWWA's~~ Water Audits and Loss Control Programs, Manual M36.

~~(c) The Department will update these regulations within six months after an AWWA's issuance of a new edition update of its the AWWA's Water Audits and Loss Control Programs, Manual M36 (e.g., after the fifth edition release) or upon an AWWA next generation update of its related Free Audit Software (e.g., after the version 6.0 release).~~

Note: Authority cited: CWC Section 10608.34; Reference: CWC Section 10608.34(a).

23 CCR § 700.1

§ 700.1. Definitions.

As used in this Chapter, the following terms are defined as follows:

(a) “Apparent losses” means losses due to unauthorized consumption and/or nonphysical (paper) losses in customer consumption attributed to inaccuracies associated with customer metering, or systematic handling errors, or unauthorized consumption.

(b) “Authorized consumption” means the volume of water taken by registered customers, the water supplier, and others who are implicitly or explicitly authorized to do so, by the water supplier for residential, commercial, industrial, or agricultural purposes. In the AWWA Free Water Audit Software, this category of components does not include water supplied to neighboring water utilities (water exported), which is instead included in the water supplied volume component. Authorized consumption does include water consumed in such activities as firefighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains, frost protection, building water, and so forth. Authorized consumption may be billed or unbilled, metered or unmetered.

(c) “AWWA” means the American Water Works Association.

(d) “CA-NV AWWA” means the California-Nevada Section of the American Water Works Association.

(e) “Data grading values” means specific grade scores (on a scale from 1 to 10) applied to each input component in the AWWA Free Water Audit Software spreadsheet.

(f) “Data Validity Score (DVS)” means a measure of the overall trustworthiness of the data entered in the AWWA Free Water Audit Software (Audit Software). The DVS represents the validity of the water audit data and is a reflection of the level of best practices employed by the water supplier associated with the water supply system subject to the audit. water utility urban retail water supplier.

(g) “Department” means the Department of Water Resources.

(h) “Infrastructure Leakage Index” means a performance indicator quantifying how well a distribution system is managed (maintained, repaired, rehabilitated) for the control of real losses at the current operating pressure.

(i) “General manager” means a person that has an executive position with the urban retail water supplier with overall responsibility for managing operations, revenue, and costs. Such a position can also be described as a water

department director, city manager, utilities manager, or the director of public works.

~~(h)~~(i) “Level 1 validation” means a review of the water loss audit validation process that includes an systematic evaluation of the accuracy of data inputs examination of the data sources used for each input and an evaluation of the DVS selected for each input and the evaluation of the application of data scoring methodology used for of the audit, as described in Section 700.3.

~~(i)~~(j) “Non-revenue water” means the portion of the water consumption that is not billed and does not produce revenue. It equals the unbilled authorized consumption plus apparent and real losses.

~~(j)~~(k) “Real Losses” means the physical water losses from the pressurized potable water system and the utility’s potable water storage tanks, up to the point of customer consumption.

~~(k)~~(l) “Report” means the water loss audit report of a potable water supply required to be submitted to the Department as specified in Section 700.5.

~~(l)~~(m) “Standardized water loss audits” means water loss audits conducted in accordance with the method adopted by the American Water Works Association AWWA, Water Audits and Loss Control Programs, Manual M36, Fourth Edition, and applied in the AWWA Free Water Audit Software, version 5.0 as specified in Section 700.2.

~~(m)~~(n) “Urban retail water supplier” means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users ~~customers~~ or that supplies more than 3,000 acre-feet of potable water annually at retail cost for municipal purposes.

~~(n)~~(o) “Validating” means a process whereby an urban retail water supplier uses a Wwater Aaudit Vvalidator to confirm the basis of data entries in the Reports and to characterize the quality of the reported data. All references herein to “validating” or “validation” refers to “Level 1 validation.”

~~(o)~~(p) “Water audit validation” refers to the process of examining water loss audit inputs to consider ~~verify~~ the water audit’s accuracy and document the sources of uncertainty associated with water audit data in order to communicate the uncertainty inherent in water audit.

~~(p)~~(q) “Water Aaudit Vvalidator” means a person who meets the requirements, of Ssection 700.4, to perform the validation of a water loss audit.

Note: Authority cited: CWC Section 10608.34, Reference: CWC Sections 10608.34(a)(1)(A), 10608.34(a)(1)(B), 10608.34(a)(1)(C), 10608.34(b), 10608.34(d), and 10608.34(f).

23 CCR § 700.2-

§ 700.2. Audit Standards and Frequency.

Urban retail water suppliers shall, on an annual basis, conduct water loss audits of their potable water systems in accordance with the methods in Chapter 3 of the American Water Works Association Water Audits and Loss Control Programs, Manual of Water Supply Practices – M36, Water Audits and Loss Control Programs, 4th Edition, American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80325-3098, 2016, and the AWWA Free Water Audit Software, version 5.0, American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80325-3098 Copyright, 2014, both hereby incorporated by reference into these regulations.

Note: Authority cited: CWC Section 10608.34, Reference: CWC Sections 10608.34(a)(1)(A), 10608.34(b)

23 CCR § 700.3

§ 700.3. Standardized Conduct for Validation of Water Loss Audits.

(a) All water loss audits shall receive a Level 1 validation.

(b) A Level 1 validation shall include:

(1) An interview between the ~~water audit~~ validator, ~~and the person or persons that prepared the water loss audit, and any member of the utility staff with information that the water audit validator believes is necessary to complete the Level 1 audit validation~~ ~~the auditor and utility staff.~~

(2) A review and evaluation of the following documentation:

(A) The completed AWWA Free Water Audit Software specified in Section 700.2.

(B) The reported water volume from its own sources, as documented by the supply meter ~~(s) or other means, as applicable.~~

(C) The reported volume of water imported and exported each month ~~by connection.~~

(D) The documentation of the ~~customer meter derivations, including and~~ supply meter ~~accuracy.~~ testing and calibration.

(E) The reported volume of ~~water sold~~ ~~authorized consumption~~ each month broken down by ~~water~~ rate, if different rates are applied to water users.

(3) A review and evaluation of the accuracy of performance indicators included in the ~~AWWA~~ Free Audit Software.

(4) A review of audit inputs and ~~data validity grades~~ ~~DVS data grading values~~ to confirm ~~a~~ correct application of methodology, and follow-up reviews (if indicated).

(5) A summary of the validation, including:

(A) Name and contact information of the ~~W~~water ~~A~~audit ~~V~~validator.

~~(B) Results of the initial performance indicator review.~~

~~(C) A ~~s~~Summary of ~~the~~ Level 1 ~~validation~~ utility staff interview, including the basis for the input derivations and the DVS selections.~~

~~(C) Any recommended changes to the water audit inputs by the water audit validator that were not accepted by the urban retail water supplier and the rationale for not accepting the recommendations.~~

~~(D) Recommendations for changes to data validity grades and rationale therefore, if changes are recommended.~~

~~(E) Any recommended changes to water audit inputs and rationale.~~

(F~~CD~~) A summary of any follow up performance indicator reviews.

(G~~DE~~) Overall impressions, including the consistency of performance indicators with system conditions and water loss management practices.

(H~~EF~~) Any recommendations for [further] validation or water loss audit improvements.

Note: Authority cited: CWC Section 10608.34, Water Code. Reference: CWC Section 10608.34(a)(1)(B).

23 CCR § 700.4

§ 700.4. Technical Qualifications for a Water Audit Validator.

(a) For purposes of Reports submitted ~~prior~~ **on or before** to June 30, 2019 ~~or until the date that the CA-NV AWWA establishes a water audit validator certificate program~~, a ~~W~~**w**~~ater A~~**a**~~udit V~~**v**~~alidator~~ means:

(1) a contractor working in the CA-NV AWWA Water Loss Technical Assistance Program ("Water Loss TAP") performing water loss audit training and conducting audit validations; **or**

(2) a person who can demonstrate **having conducted** that their primary business practice is conducting water loss audits in accordance with the **AWWA's Water Audits and Loss Control Programs, Manual M36 (4th edition)**, American Water Works Association, Water Audits and Loss Control Programs Manual of Water Supply Practices — M36, Water Audits and Loss Control Programs, 4th Edition, American Water Works Association, 2016, and the **AWWA Free Water Audit Software, version 5.0**, and **has having** conducted a minimum of ~~30~~ **10** Level 1 audit validations in accordance with the Water Research Foundation Standard **Level 1 Water Audit Validation: Guidance Manual 4639A** (Water Audit Validation); **or**:

(3) an individual certified by the CA-NV AWWA as a water audit validator.

(b) For purposes of Reports submitted **on or** after July 1, 2019, a ~~qualified~~ **water loss audit** validator means an individual certified by the CA-NV AWWA as a ~~W~~**w**~~ater A~~**a**~~udit V~~**v**~~alidator~~.

(c) An urban retail water supplier may conduct a water loss audit validation for its own water loss audit provided the person performing the validation meets the requirements ~~described in subsections (a), (b) and (d)~~ **in this Section**.

(d) A ~~W~~**w**~~ater A~~**a**~~udit V~~**v**~~alidator~~ may not conduct a water loss audit validation if ~~they~~ **he or she** participated in compiling the water loss audit.

Note: Authority cited: CWC Section 10608.34,. Reference: CWC Sections 10608.34(b) and Section 10608.34(a)(1)(C) of the Water Code.

23 CCR § 700.5

§ 700.5. Audit Reporting Requirements.

(a) Not later than October 1, 2017, and by October 1 of every year thereafter, urban retail water suppliers shall submit a Level 1 validated Report to the Department. The Report shall include data spanning 12 consecutive months, as follows: for either the previous calendar year or the water supplier's fiscal year.

(1) For utilities that prefer to provide Reports on a calendar year basis the reporting period shall be for calendar year 2016 and annually thereafter.

(2) For utilities that prefer to provide Reports on a fiscal year basis that is not on the calendar year, the first reporting period shall be for their fiscal year 2015-16 or 2016-2017, fiscal year 2016-17 and annually thereafter.

~~(1)~~ (3) For the fiscal portions of the Report, utilities may use the previous year's fiscal information.

(b) Reports under subsection (a) shall be submitted in two separate files. One file shall be in a complete and fully operational water loss audit spreadsheet format generated from the AWWA Free Water Audit Software, that contains the water audit information specified in subsection (1) below. The second file shall be a document file in Adobe Acrobat that contains the information specified and shall contain in subsection (2) thru subsection (4) below:

(1) System-specific data entered into each field in the reporting water loss audit spreadsheet worksheets of the AWWA Free Water Audit Software, with a data validity score DVS.

(2) In 2017, information identifying steps taken by the urban retail water supplier in the previous year to increase the validity of data entered into the final audit, reduce the volume of apparent losses, and reduce the volume of real losses, as informed by the annual validated water audit.

(3) Beginning in 2018, Beginning in 2018, information identifying steps taken by the urban retail water supplier in the preceding 3 years to increase the validity of data entered into the final audit, reduce the volume of apparent losses, and/or reduce the volume of real losses, as informed by the annual validated water audit.

(4) In the case of urban retail water suppliers with two or more separate public water systems, separate worksheets meeting the requirements in Section 700.5(b)(1) for each water system. A statement confirming the Level 1 validation of the submitted water loss audit, including the validation findings, and documenting the following:

(A.) Identification of the water audit validator.

(B.) Qualification of the water audit validator.

(C.) Date of the Level 1 validation review.

~~(4)~~ (5) The following Water Loss Audit Certification Statement, signed by the chief financial officer, the chief engineer or the general manager of an urban retail water supplier:

“This water loss audit report meets the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34 and has been prepared in accordance with the method adopted by the American Water Works Association, as contained in their manual, *Water Audits and Loss Control Programs*, Manual M36, Fourth Edition and in the Free Water Audit Software version 5.0.”

(c) In the case of urban retail water suppliers with two or more separate public potable water systems, the urban retail water supplier shall submit a ~~either~~ separate ~~worksheets~~ AWWA Free Water Audit Software spreadsheet worksheets meeting the requirements in Section 700.5(b)(1) for each potable water system or a combined set of spreadsheet worksheets for its potable water systems.

~~(c)~~ (d) Reports required under subsection (a) shall be submitted using the Department’s online submittal tool for validated water loss audit ~~Reportss~~.

~~(d)~~ (e) The Department shall make the online submittal tool available on its internet website prior to submission periods.

Note: Authority cited: CWC Section 10608.34, Reference: CWC Sections 10608.34(a)(1)(B), 10608.34(a)(1)(E), 10608.34(b), and 10608.34(e).

23 CCR § 700.6

§ 700.6. Validated Water Loss Audit Acceptance Criteria.

(a) The Department shall evaluate Reports submitted under Section 700.5. A Report shall be accepted if it contains the elements required under Section 700.5(b) and meets the following criteria:

(1) ~~I~~the Report was properly validated, including whether it was validated by an individual with the qualifications specified in Section 700.4 of this Chapter. Documentation of validation shall include the date of validation completion, the validation findings, and the certification and identification of the qualified water loss validator.

(2) ~~I~~the data and ~~data grading values~~ data grading scores ~~DVS~~ in the audit sheet indicate that the system is operating in a manner that is congruent with known characteristics of ~~potable~~ water system operations. To evaluate congruency, the Department may consider the presence and significance of any of the following conditions:

(A.) The real losses are less than 0.0.

(B.) The cost of the non-revenue water is greater than 100% of operating costs.

(b) If the Department does not accept a Report as described in subsection (a), the Department shall return the Report to the urban retail water supplier. The urban retail water supplier shall resubmit a completed Report within 90 days of a Report being returned.

Note: Authority cited: CWC Section 10608.34, Reference: CWC Section 10608.34(f).